

METHOD AND APPARATUS FOR
OPHTHALMOLOGICAL SURGERY

ABSTRACT OF THE DISCLOSURE

The invention contemplates use of a scanning laser characterized by ultraviolet radiation to achieve controlled ablative photodecomposition of one or more selected regions of a cornea. Irradiated

5 flux density and exposure time are so controlled as to achieve desired depth of the ablation, which is a local sculpturing step, and the scanning action is coordinated to achieve desired ultimate surface change in the cornea. The scanning may be so controlled as

10 to change the front surface of the cornea from a greater to a lesser spherical curvature, or from a lesser to a greater spherical curvature, thus effecting reduction in a myopic or in a hyperopic condition, without resort to a contact or other corrective auxil-

15 iary lens technique, in that the cornea becomes the corrective lens. The scanning may also be so controlled as to reduce astigmatism and to perform the precise incisions of a keratotomy. Still further, the scanning may be so controlled as to excise corneal tissue uniformly

20 over a precisely controlled area of the cornea for precision accommodation of a corneal transplant.